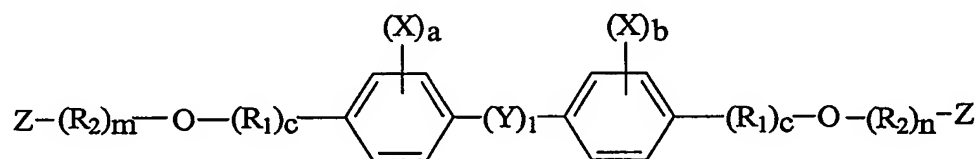


CLAIMS:

1. A method of manufacturing a replica, which method comprises the provision of a polymerizable resin composition between a front mold having a pre-shaped surface, and a back mold having a pre-shaped surface, carrying out a curing treatment and removing the replica thus manufactured from the molds, which replica comprises a solid body onto which the shape of the surface of the front mold and the shape of the surface of the back mold have been reproduced, characterized in that the curing treatment is a UV-light initiated cationic polymerization, the resin composition used being a compound comprising at least two cationically polymerizable cyclic ether groups, which only shows signs of gelation when at least 30 % of the conversion that can be achieved in the mold under the relevant curing conditions has taken place.

2. A method as claimed in claim 1, characterized in that the resin composition further comprises a reactive diluent.

3. A method as claimed in claim 1-2, characterized in that the compound is represented by the following general formula:



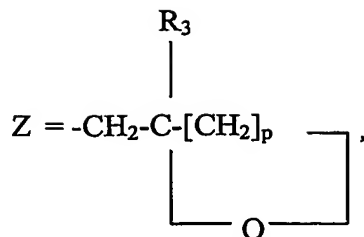
wherein:

Y = -O-, -SO₂-, -CH₂-, -C(CF₃)₂-, -C(CH₃)₂-, -C(=O)-, -O-C(=O)-, -O-C(=O)-O-,

X = a halogen or CH₃,

R₁ = -CH₂-, -C(CH₃)₂-,

R₂ = -OCH₂CH₂-, -OCCH₃HCH₂-, -OCH₂CCH₃H-, -OCH₂CHOHCH₂-,



$\text{R}_3 = \text{H}, \text{C}_n\text{H}_{2n+1},$

$n = \text{an integer} \geq 1,$

$p = 1-4,$

m, a, b, c are each individual integers in the range from 0-4.

4. A method as claimed in claims 1-2, characterized in that the compound is selected from the group formed by 1,2,7,8-diepoxyoctane, 3,4-epoxycyclohexylmethyl-3',4'-epoxycyclohexanecarboxylate, bis(3,4-epoxycyclohexylmethyl)adipate, bis(3,4-epoxy-6-methylcyclohexylmethyl)adipate and C_{12} - C_{14} -alkylglycidylether and the corresponding oxetane compounds thereof, in particular 1,4-bis[(3-ethyl-3-oxetanylmethoxy)methyl] benzene.

5. A method as claimed in claims 1-4, characterized in that for the reactive diluent use is made of a compound selected from the group formed by butylglycidylether, heptylglycidylether, octylglycidylether, allylglycidylether, p-t-butylphenylglycidylether, phenylglycidylether, cresylglycidylether, diglycidylether of 1,4-butanediol, diglycidylether of neopentylglycol, diglycidylether of polypropeneglycol, vinylcyclohexanedioxide, diglycidylether of recorcinol, diglycidylether of polypropeneglycol and diglycidylester of linoleic acid dimer and the corresponding oxetane compounds thereof.

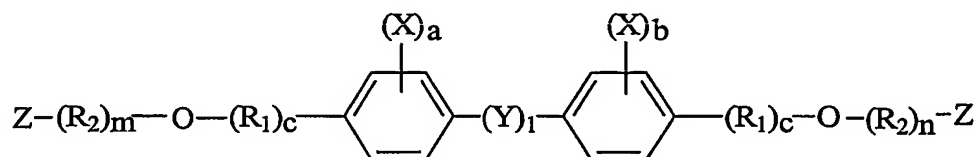
6. A replica obtained by carrying out a UV light-initiated cationic polymerization of a compound comprising at least two cationically polymerizable cyclic ether groups, which compound only exhibits gelation when at least 30 % of the conversion that can be achieved in the mold under the relevant curing conditions has taken place, if necessary in the presence of a reactive diluent.

7. A replica as claimed in claim 6, characterized in that this replica comprises a relief structure on at least one side, which relief structure must meet high (sub-micron) requirements with a view to the necessary accuracy of form.

8. A replica as claimed in claims 6-7, characterized in that the replica obtained is an optical component.

9. A replica as claimed in claim 8, characterized in that the optical component obtained is an (a)spherical lens, a lens array, a prism, a grating or another relief structure for optical applications, or a combination thereof.

10. A replica as claimed in claims 6-9, characterized in that the compound is represented by the following general formula:



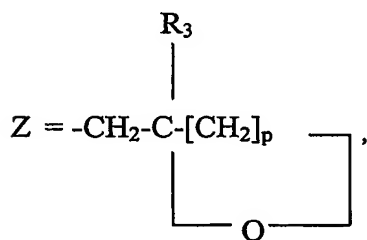
wherein:

$Y = -O-, -SO_2-, -CH_2-, -C(CF_3)_2-, -C(CH_3)_2-, -C(=O)-, -O-C(=O)-, -O-C(=O)-O-$

$X = \text{a halogen or } CH_3,$

$R_1 = -CH_2-, -C(CH_3)_2-,$

$R_2 = -OCH_2CH_2-, -OCCH_3HCH_2-, -OCH_2CCH_3H-, -OCH_2CHOHCH_2-,$



$R_3 = H, C_nH_{2n+1},$

$n = \text{an integer } \geq 1,$

$p = 1-4,$

$m, a, b, c \text{ are each individual integers in the range from } 0-4.$

11. A replica as claimed in claims 6-10, characterized in that the compound is selected from the group formed by 1,2,7,8-diepoxyoctane, 3,4-epoxycyclohexylmethyl-3',4'-epoxycyclohexanecarboxylate, bis(3,4-epoxycyclohexylmethyl)adipate, bis(3,4-epoxy-6-

methylcyclohexyl-methyl)adipate and C₁₂-C₁₄-alkylglycidylether and the corresponding oxetane compounds thereof, in particular 1,4-bis[(3-ethyl-3-oxetanylmethoxy)methyl]benzene.

- 5 12. A replica as claimed in claims 6-11, characterized in that for the reactive diluent use is made of a compound selected from the group formed by butylglycidylether, heptylglycidylether, octylglycidylether, allylglycidylether, p-t-butylphenylglycidylether, phenylglycidylether, cresylglycidylether, diglycidylether of 1,4-butanediol, diglycidylether of neopentylglycol, diglycidylether of polypropeneglycol, vinylcyclohexanedioxide,
- 10 diglycidylether of recorcinol, diglycidylether of polypropeneglycol and diglycidylester of linoleic acid dimer and the corresponding oxetane compounds thereof.